

# Federal Recovery & Resiliency Programs

presentation for

Urban Area Security Initiative Conference



## Report Documentation Page

*Form Approved*  
*OMB No. 0704-0188*

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE <b>01 JUN 2011</b>	2. REPORT TYPE <b>Final</b>	3. DATES COVERED <b>01 May 2011 - 01 Jun 2011</b>	
4. TITLE AND SUBTITLE <b>Wide Area Recovery and Resiliency Program (WARRP) Presentation - Federal Recovery and Resiliency Programs</b>		5a. CONTRACT NUMBER	
		5b. GRANT NUMBER	
		5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) <b>Briese, Garry</b>		5d. PROJECT NUMBER	
		5e. TASK NUMBER	
		5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>Cubic Corporation 2280 Historic Decatur Road, Suite 200 San Diego, CA 92106</b>		8. PERFORMING ORGANIZATION REPORT NUMBER	
		10. SPONSOR/MONITOR'S ACRONYM(S) <b>DHS</b>	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) <b>Lori Miller Department of Homeland Security Science and Technology Directorate Washington, DC 20538</b>		11. SPONSOR/MONITOR'S REPORT NUMBER(S) <b>3.1.1</b>	
		12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release, distribution unlimited</b>	
13. SUPPLEMENTARY NOTES <b>The original document contains color images.</b>			
14. ABSTRACT <b>The panel discussion focused on the Federal and Regional investments in all hazard recovery. Participants provided an overview of programs from both a Federal and local perspective with a moderated panel with Federal Leaders and Local UASI representatives. This presentation covered IBRD, PATH/AWARE, WARRP, the WARRP Recovery Framework, and BOTE.</b>			
15. SUBJECT TERMS <b>WARRP, Recovery and Resiliency, IBRD, PATH/AWARE, BOTE</b>			
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>	<b>UU</b>
			18. NUMBER OF PAGES <b>34</b>
			19a. NAME OF RESPONSIBLE PERSON

# Federal Collaborative Programs

DHS (S&T, OHA, NPPD, FEMA), DOD (Policy, DTRA), EPA (NHSRC, OEM) & HHS (ASPR, CDC) have all agreed to work collectively on some of the Nation's largest challenges, responding to and recovering from a catastrophic event.

- Interagency Biological Restoration Demonstration (IBRD)
  - National Planning Scenario #2 – Wide Area Biological Attack
- Wide Area Recovery and Resiliency Program (WARRP)
  - National Planning Scenario #2 (Biological), National Planning Scenario #3 (RDD), and National Planning Scenario #5 (Chemical) within an All Hazards Construct
- Bio-Response Operational Testing and Evaluation (BOTE)
  - BOTE is a two-phased interagency project headed by DHS and EPA, designed to conduct and evaluate field level facility biological remediation studies of various decontamination technologies and to exercise biological incident response



Homeland  
Security



---

# Interagency Biological Restoration Demonstration (IBRD)

*Chris Russell  
Program Manager  
R&D Branch  
Chemical and Biological Division*





# Bottom Line Up Front

## THE PROBLEM:

- A **wide-area biological attack** similar to National Planning Scenario #2 **will significantly challenge** the ability of a large urban area to maintain **long-term viability**
- There are a number of scientific, technical, operational and policy “gaps” that negatively impact the recovery process

## CONTRIBUTIONS TO SOLUTION:

- Risk-Based processes for consequence management
- Community involvement in the recovery process
- Active DoD involvement during the response phase to enable recovery
- Science and Technology capabilities that integrate with planning/guidance documents to increase efficiency of recovery operations
- Coordination across federal interagency, federal-to-regional, civilian-to-military, and public-to-private stakeholders

**The Interagency Biological Restoration Demonstration (IBRD) Program is providing solutions for identified gaps**



# IBRD Collaborative Program

- **Goal:** Reduce the time and resources necessary to recover and restore wide urban areas, military installations, and critical infrastructure following a biological incident
- **Objectives:**
  - Understand the **social, economic, and operational interdependencies**, past and present, that impact recovery and restoration actions
  - Establish long term **formal coordination between DoD and DHS** and how this level of coordination can be optimized for stakeholder's use at the state, regional, and local levels
  - Develop strategic **restoration plans for DoD & DHS** that can be utilized in other parts of the nation
  - Identify & demonstrate **technologies** that support recovery and restoration operations
  - **Exercise** restoration activities & available technology solutions using national planning scenarios

**DoD & DHS co-sponsored program**



# Response and Recovery Actions

As defined by the Office of Science and Technology Policy (OSTP)

RESPONSE AND RECOVERY ACTIVITIES					
(CRISIS MANAGEMENT)		(CONSEQUENCE MANAGEMENT)			
Notification	First Response	Remediation/Cleanup			Restoration (Recovery)
		Characterization	Decontamination	Clearance	
Receive information on biological Incident	Initial threat assessment HAZMAT and emergency actions	characterization of biological agent	Decontamination strategy	Clearance environmental sampling and analysis	Renovation
Identification of suspect release sites	Forensic investigation Public health actions	Characterization of affected site Site containment	Remediation Action Plan Worker health and safety Site preparation	Clearance decision	Reoccupation decision
Notification of appropriate agencies	Screening sampling Determination of agent type, concentration, and viability Risk communication	Continue risk communication Characterization environmental sampling and analysis Initial risk assessment Clearance goals	Source reduction Waste disposal Decontamination of sites or items Decontamination verification		Long-term environmental and public health monitoring

**IBRD Scope**



# Program Participation

- **Federal Interagency Team**

- DoD (DTRA/JSTO)
- DHS (S&T)
- EPA (OEM)
- HHS (ASPR)

- **Regional Participation**

- Federal Regional: DHS, EPA, HHS, FBI
- Military Installations: Joint Base Lewis-McChord, Madigan Army Medical Center
- State of WA: OEM, Public Health, State-wide regulatory agencies
- Seattle Urban Area Security Initiative (UASI)
- Private Sector

- **Interagency Working Group participation**

- DoD: JPEO-CBD, JSTO, NORTHCOM, US Army, USAF, NGB, WA WMD CST, USACE
- DHS: S&T, OHA, FEMA, USCG
- EPA (OEM, NHSRC, OPP), HHS (ASPR, CDC, NIOSH), FBI, DOT, DNI, DOC, WA State (PH and EM)





# Key Results

- **Baseline Systems Analysis**
  - Current national capabilities and methods for recovery utilized in 2001 set initial timeline for wide-area restoration at **>10 years**
- **Community Resilience**
  - Standard property leases allow for tenants to walk away **after 6 months** of unavailable access (game-changers needed)
- **Planning and Guidance**
  - Remediation activities need to be flexible to allow for multiple approaches (including community self-decon)
  - Risk-based approaches for characterization, decontamination, and clearance required to compress timeline
- **Science and Technology**
  - IBRD provided solutions expected to significantly reduce timeline for recovery from a wide-area biological attack
  - Efforts included CIV/MIL compatible information management toolsets, wide-area decon solutions and application devices, sampling efficiency improvements, and detection technologies

## Analysis



## Planning



## Exercise



## Demonstration



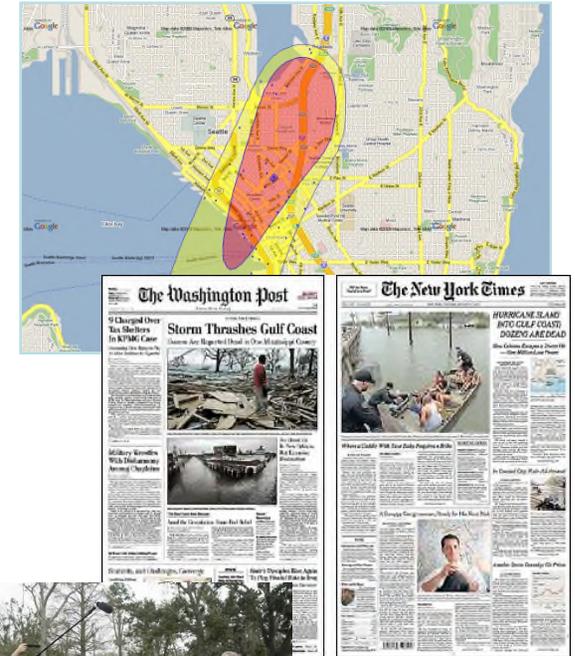
***PATH (Prioritization Analysis  
Toolset for All-Hazards)***

***AWARE (Analyzer for Wide-Area  
Restoration Effectiveness)***

*Mr. Grant Tietje  
Planning Coordinator  
Seattle Police Department  
Office of Emergency Management*

# In wide-area restoration, prioritization of critical infrastructure (CI) will be complex and politically charged

- **Multi-jurisdictional incident**
  - Loss of functionality across many systems (e.g., military, healthcare, utilities, transportation, etc.)
  - Limited availability of restoration resources (e.g., decontamination equipment, lab analysis capacity)
  - Local, regional, and national impacts, many considerations (e.g., civilian-military tradeoffs)
- **High level of public visibility/scrutiny**
  - Decisions must be transparent and objective

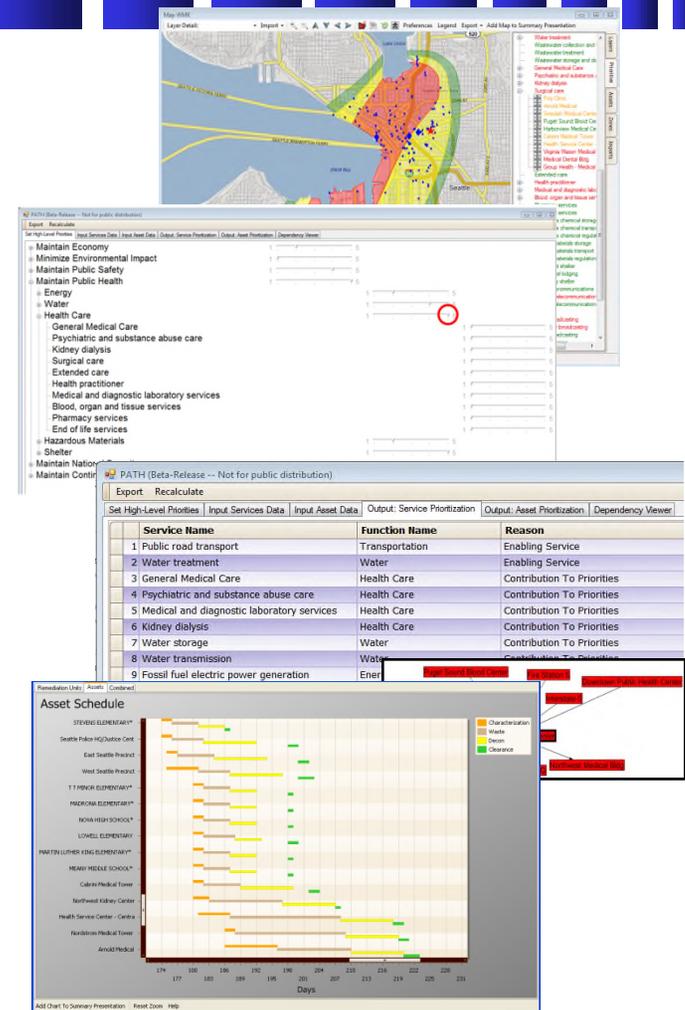


**Decision-makers need a validated and defensible way to prioritize across multiple systems and critical infrastructure**

# PATH/AWARE is a prototype software capability for the prioritization of CI for restoration, with all-hazards applications

- **Front end GIS provides situational awareness** including regional service and asset status, CI information, and dependencies
- **User inputs weightings on recovery objectives, key functions, and services**
- **Prioritization algorithm generates an objective, analysis-based list of prioritized services and assets** by applying scenario input, user input, and CI data
- **PATH/AWARE analyzes restoration resource allocation and outputs remediation timelines and cost** enabling decision makers to identify when critical assets, services, and areas will be restored and at what price

**PATH/AWARE enables “what-if analysis” to support and refine restoration strategy development**



---

# Wide-Area Recovery & Resiliency Program (WARRP)

*Chris Russell  
Program Manager  
R&D Branch  
Chemical and Biological Division*





# IBRD to WARRP Program Path Forward

- IBRD becomes Wide Area Recovery and Resiliency Program - WARRP (All Hazards, with a focus on CBR)
- Major Federal Players: DHS (FEMA, OHA, S&T, IP), DOE, HHS (ASPR, CDC), EPA and DoD
- State, Regional and Local Partners
- Test and evaluate transportability of Consequence Management Guidance, tools and solution sets
- Further explore the interdependencies between DoD, Public Health and the Socio-Economic areas
- Focus on transition



# Wide Area Recovery and Resiliency Program (WARRP)

## **Goal:**

Working with interagency partners, including federal /state / local / tribal governments, military, private industry and non-profit organizations, develop solutions to reduce the time and resources required to recover wide urban areas, military installations, and other critical infrastructures following a catastrophic chemical, biological, or radiological (CBR) incident.

## **Objectives:**

1. Develop/refine guidance, plans, and decision frameworks for long term recovery that can be leveraged and transitioned to other parts of the United States and internationally as applicable.
2. Identify, develop/refine, demonstrate, and transition technologies/standards that support recovery prioritization, planning and operations.
3. Better understand the public health strategies and challenges related to long term recovery and recommend changes as needed to public health guidance and/or plans.
4. Exercise programmatic solutions for CBR recovery
5. Enhance long-term formal coordination between DOD, DHS, DOE, EPA, and HHS that will be optimized for stakeholder use at the state, regional, and local levels.

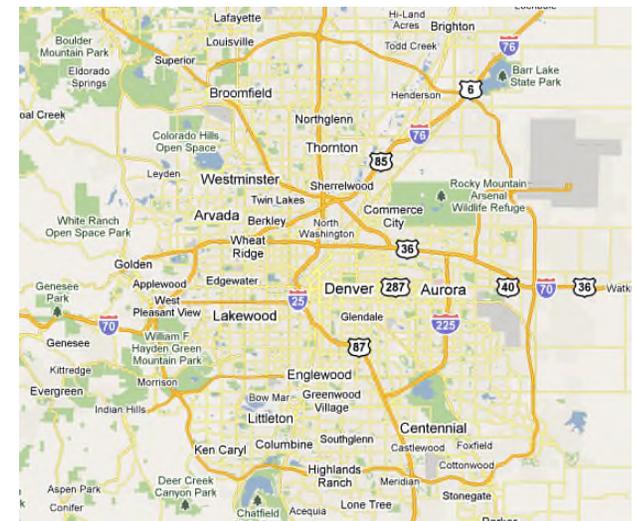


Homeland Security

Science and Technology



DHS (S&T) sponsored program



Coordination & partnership with the Denver, CO region



# Summary

- **Focus on Broader Challenges**
  - All Hazards Framework
  - Chemical, Biological and Radiological Catastrophic Planning
  - Public Health emergency from beginning to end
- **Operationalize IBRD work**
  - Provide National and UASI level guidance in alignment with FEMA
  - Consequence Management Tools CBR focused and aligned with Federal and commercial applications (e.g. IPAWS, WebEOC...)
- **Science and Technology efforts**
  - Broader ICLN context
  - Harmonize with existing demonstration and tech development (e.g. BOTE, TaCBRD, MAMPT...)
  - More Agent Fate and transport studies
- **Workshops/Exercises**
  - Public/Private Sector Interaction
  - Catastrophic Planning and exercises

---

# WARRP Recovery Frameworks

**Garry Briese**  
*Local Program Integrator*  
*Wide Area Resiliency & Recovery Program (WARRP)*





# WARRP Recovery Framework

- Why a framework versus plans?

## Framework Approach

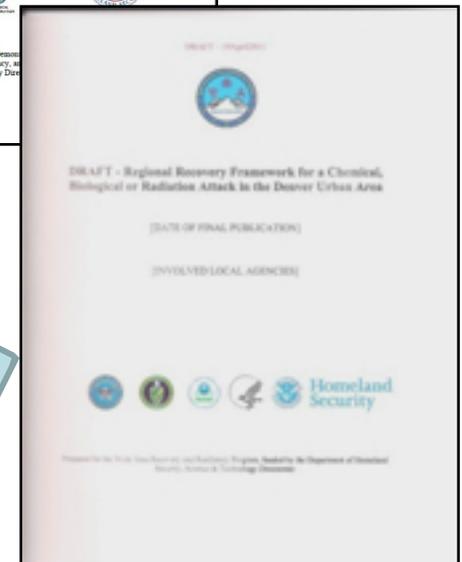
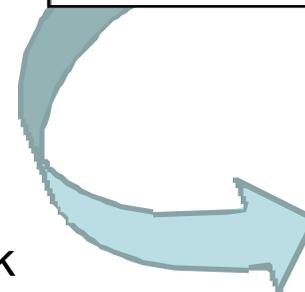
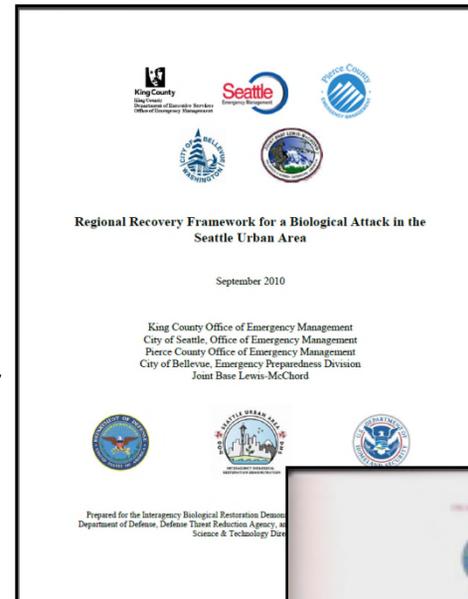
- Follow all-hazards doctrine
- Enhance not duplicate or create new
- Simplify not complicate
- Fully integrate private sector & military





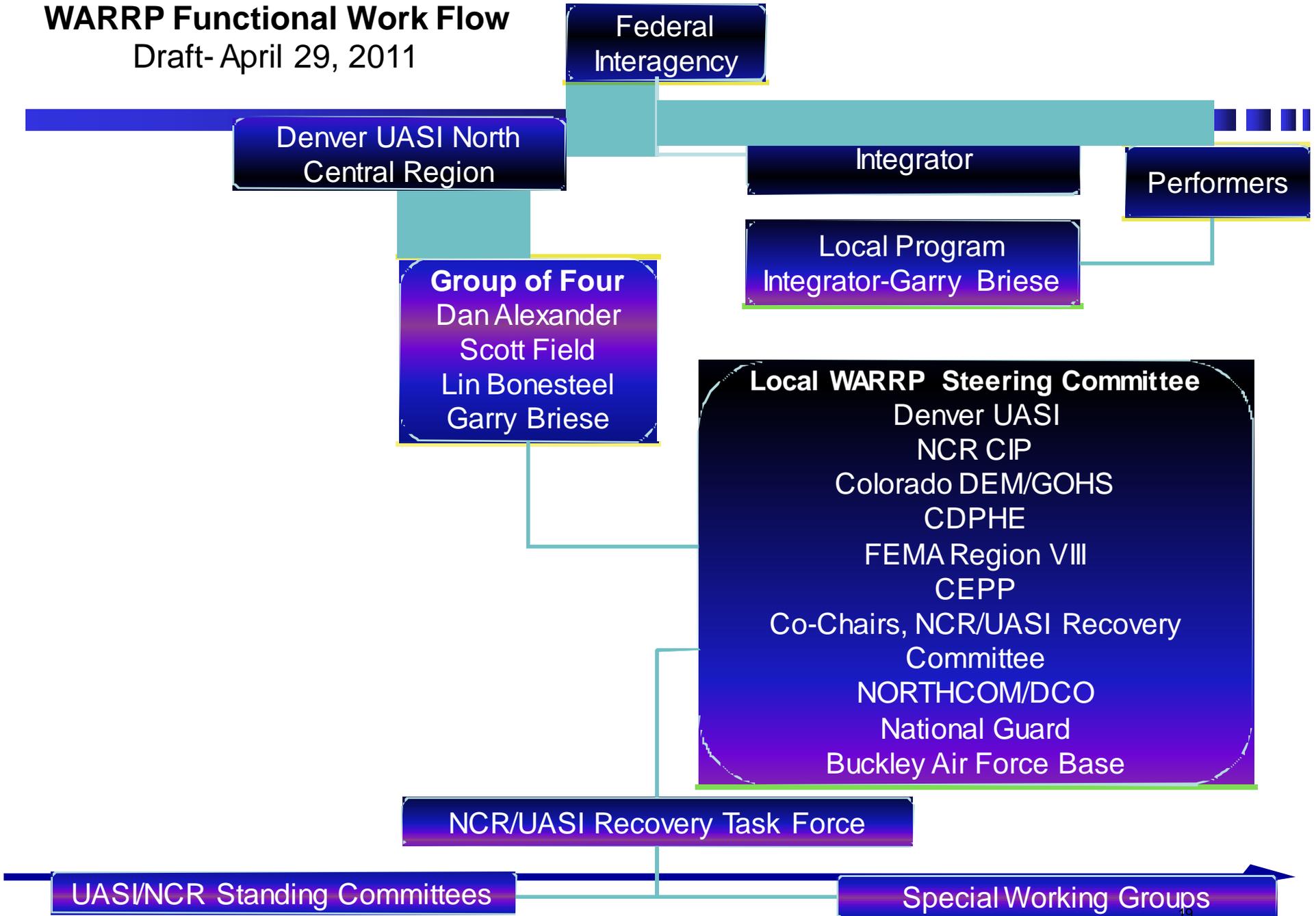
# WARRP Framework Approach (continued)

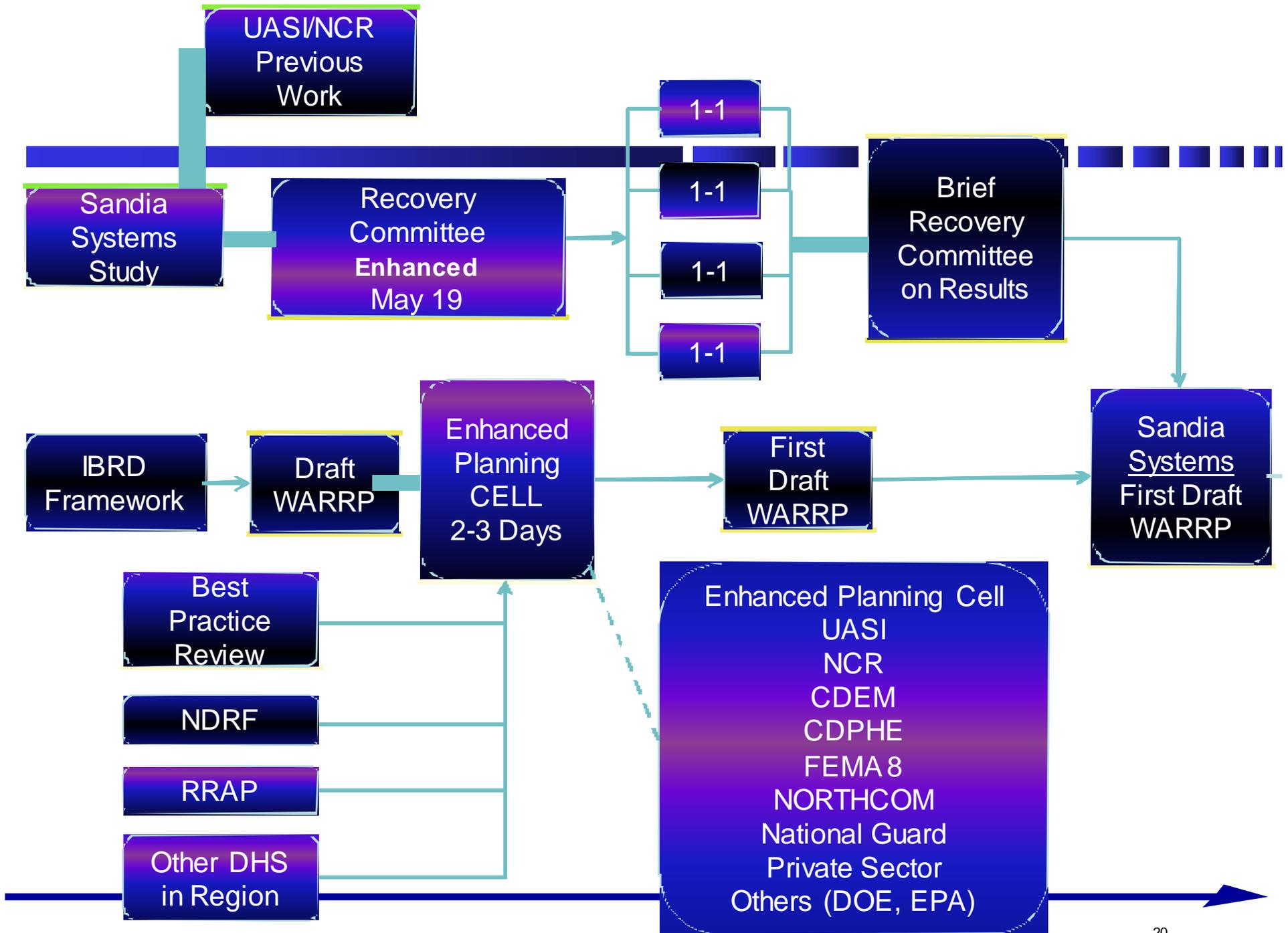
- Build on success of IBRD Seattle
- Use national and international best practices
- Focus on economic resiliency & recovery
- Reduce time to acceptance & implementation
- Start with the end in mind
  - IBRD Framework to WARRP Framework

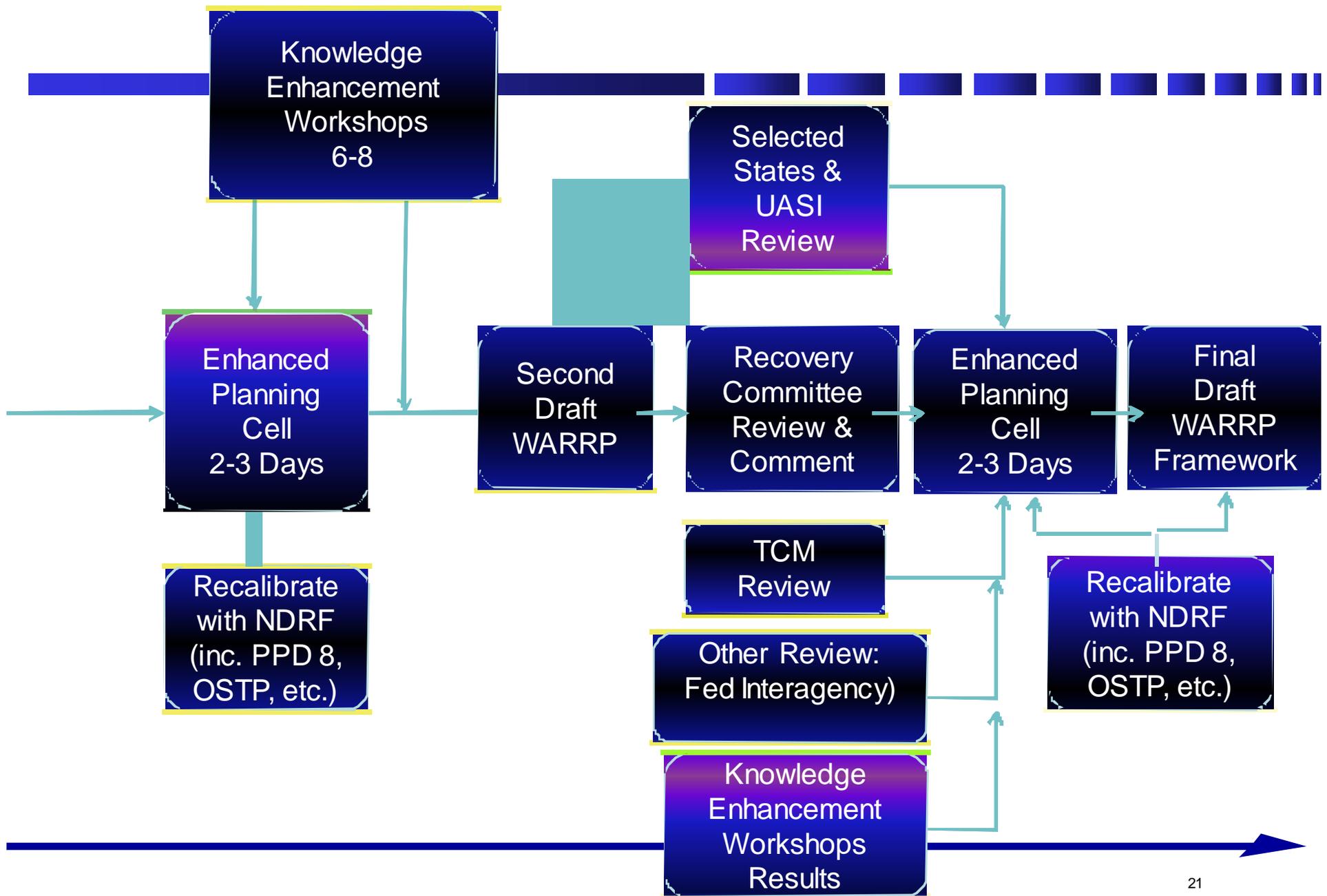


# WARRP Functional Work Flow

Draft- April 29, 2011







---

# Bio-Response Operational Testing and Evaluation (BOTE)

**Shannon Serre**  
***BOTE Program Manager***  
***National Homeland Security Research Center***  
***Office of Research and Development***  
***Environmental Protection Agency***





# Key Participants

Shawn Ryan  
Shannon Serre  
EPA ORD  
*Program Manager*

Chris Russell  
DHS S&T  
*Program Manager*



MAJ James Clegern  
DTRA  
*Study Coordinator*

*Exercise*  
Chris Russell, DHS  
Erica Canzler, EPA  
Angie Weber, CDC



*Decon*  
Shannon Serre, EPA

*Sampling*  
Dino Mattorano, EPA

*Economics*  
Paul Lemieux, EPA

*Risk Analysis*  
Erin Silvestri, EPA  
Tonya Nichols, EPA



# BOTE Project Overview

**BOTE is a two-phased interagency project headed by DHS and EPA, designed to conduct and evaluate field-level facility biological remediation studies of various decontamination technologies and to exercise biological incident response.**

## **Phase 1 (April- May 2011)**

Efficacy Evaluation of three decontamination methods used to remediate a facility contaminated with a *Bacillus anthracis* (Ba) Surrogate

## **Phase 2 (September 2011)**

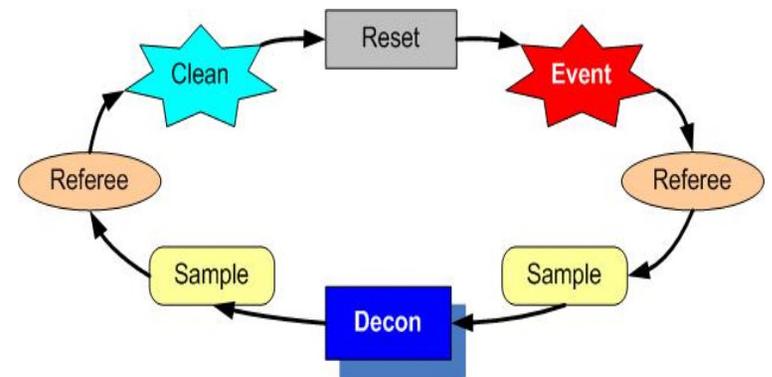
Bio-Incident Response Exercise. Covert release; followed by an interagency response that includes evidence collection and analysis and facility remediation.



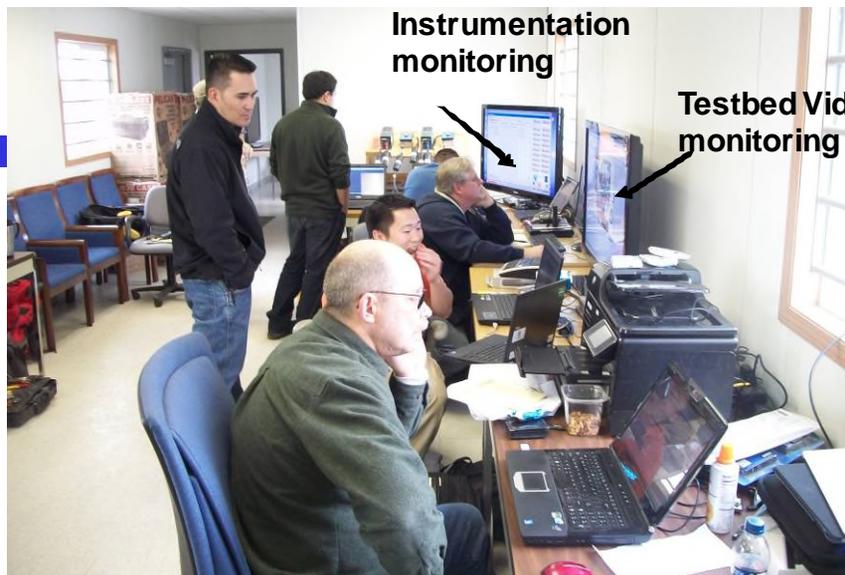


# Overview of Rounds

- A Round is defined as:
  - Dissemination of *Bacillus atropheus* spores in facility
    - First Floor – high contamination ( $\sim 10^6$  spores/ft<sup>2</sup>)
    - Second Floor – low contamination ( $\sim 10^2$  spores/ft<sup>2</sup>)
  - Pre-decontamination sampling
  - Application of specified decontamination procedure(s)
  - Post-decontamination sampling
  - Post-test analysis (assessment of effectiveness)
  - Reset facility for next round of testing



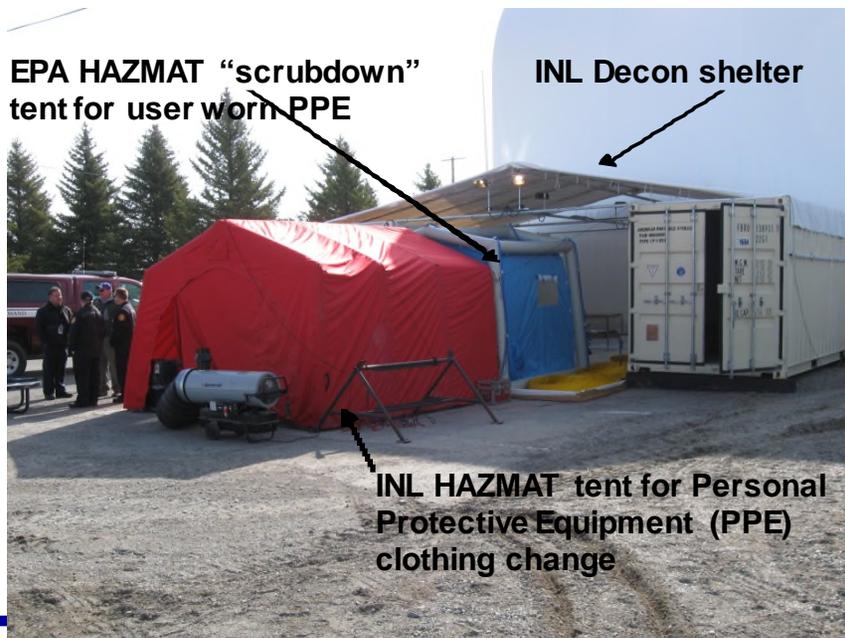
# Round 1 Execution



Instrumentation monitoring

Testbed Video monitoring

On Site Command Center



EPA HAZMAT "scrubdown" tent for user worn PPE

INL Decon shelter

INL HAZMAT tent for Personal Protective Equipment (PPE) clothing change

Decon line



PBF-632 Airlock between 2<sup>nd</sup> and 1<sup>st</sup> floor low and high simulant concentration areas (required for cross contamination control)

## Round 1 Execution – Sampling Teams



Teams enter facility



3 man sampling teams



Recording sample location



Sample Collection



CST recording  
sample info with  
BROOM PDA



Instrumentation team helps  
monitor active CST

## Round 1 – Decon line and Sample Processing



CST performing  
personnel and  
equipment decon



INL HAZMAT  
performing CST  
decon



INL HAZMAT performing  
equipment decon



Samples released from decon line

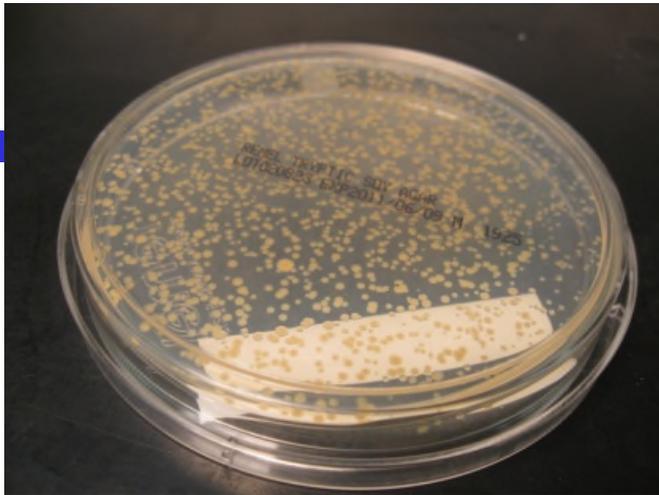


Sample processing



Sample shipping preparation

# Round 1 - VHP Decon Execution 4/20/11



BG after 12 hours growth



VHP generation equipment



STERIS Monitoring VHP decon production



HEPA negative air filters being used to reduce building VHP levels





# Post-Test Analysis

- Efficacy of decontamination methods
- Documentation of operational parameters
  - Time requirements
  - Labor hours
  - Waste generation
  - Adverse impacts on the facility
- Economic Analysis
  - Capture data from studies
  - Assessment of cost of application of technology
  - Estimator for future events
- Risk Analysis



## Exercise (Phase II)

- Conducted in September 2011
- Covert Release in Facility
- Coordinated Interagency Response
- Decon method(s) will be determined
- Environmental Clearance Committee



# Summary

- BOTE project will provide:
  - Information on the efficacy of several decontamination methods
  - Information on the time requirements, labor requirements, waste generated, and adverse impacts on the facility
  - Information that can be used to estimate costs associated with a decontamination approach
  - Data that can be used to help guide decision making for future events



## Transition and Sustainability / Local and Federal Partnerships

- *Goal/Objectives*

- Develop more **useful, usable, and accessible** capabilities in support of wide-area restoration and recovery planning, exercising, and operations
  - Useful
    - Develop with an “all-hazards” frame of mind
  - Usable
    - Develop Concept of Operations (ConOps)
    - Vetting of capability through Interagency Working Group
  - Accessible
    - Pilot deployments in local EOC’s
    - Develop web-based capability, which can be centrally located and maintained, “software as a service” model

**Desired outcome/end-state is the transition of Frameworks and Technology to sustainment partner, and increase availability to broader Emergency Management community**

# Points of Contact



## Interagency Biological Restoration Demonstration (IBRD) Program

Ryan Madden (DTRA), [ryan.madden@dtra.mil](mailto:ryan.madden@dtra.mil)

Christopher Russell (DHS S&T), [christopher.e.russell@dhs.gov](mailto:christopher.e.russell@dhs.gov)

## PATH/AWARE

David Franco (SNL), [dofranc@sandia.gov](mailto:dofranc@sandia.gov)

Grant Tietje (Seattle OEM), [Grant.Tietje@Seattle.Gov](mailto:Grant.Tietje@Seattle.Gov)

## Wide-Area Recovery & Resiliency Program (WARRP)

Christopher Russell (DHS S&T), [christopher.e.russell@dhs.gov](mailto:christopher.e.russell@dhs.gov)

Garry Briese (Local Program Integrator) [gbriese@brieseandassociates.com](mailto:gbriese@brieseandassociates.com)

## Bio-Response Operational Testing and Evaluation (BOTE)

Shannon Serre (EPA NHSRC), [Serre.Shannon@epamail.epa.gov](mailto:Serre.Shannon@epamail.epa.gov)